

# FLUE GAS DESULFURIZATION PROCESS AND APPARATUS FOR REMOVING NI-TROGEN OXIDES

## Abstract

An apparatus and process for removing acidic gases and NOx from flue gases produced by utility and industrial plants. The process and apparatus convert NOx, and particularly nitric oxide, to nitrogen dioxide, which is then reacted to form a valuable byproduct. The process generally entails contacting a flue gas with a scrubbing medium to absorb acidic gases from flue gas and produce an intermediate flue gas. The intermediate flue gas is then cooled to cause nitric oxide present therein to be oxidized to form nitrogen dioxide, which is then absorbed from the flue gases to produce a nitrogen dioxide-containing solution and a scrubbed flue gas. The nitrogen dioxide in the nitrogen dioxide-containing solution is then reacted with ammonium hydroxide to form ammonium nitrate as a valuable byproduct.